SHARP

SERVICE MANUAL/SERVICE-ANLEITUNG/MANUEL DE SERVICE

S94C6RT-160HS

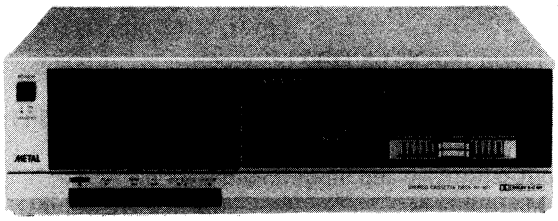

PHOTO : RT-160H(S)

RT-160H(S)
RT-160E(S)

DOLBY B-C NR ®

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- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.
- Im Interesse der Benutzer-Sicherheit sollte dieses Gerät wieder auf seinen ursprünglichen Zustand eingestellt und nur die vorgeschriebenen Teile verwendet werden.
- Dans l'intérêt de la sécurité de l'utilisateur, l'appareil devra être reconstitué dans sa condition première et seules des pièces identiques à celles spécifiées, doivent être utilisées.

Note for users in UK
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INHALTSVERZEICHNIS

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SHARP CORPORATION

RT-160H(S)

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FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

Power source:	AC220 V, 50/60 Hz (RT-160H) AC240 V, 50/60 Hz (RT-160E)
Power consumption:	13 W
Semiconductors:	5 ICs 12 Transistors 7 Diodes 11 LEDs
Dimensions:	Width; 390 mm (15-3/8") Height; 118 mm (4-5/8") Depth; 235 mm (9-1/4")
Weight:	2.9 kg (6.4 lbs.)
Tape:	Compact cassette tape
Tape speed:	4.75 cm/sec. (1-7/8 ips.)
Wow & flutter:	0.08% (WRMS)
Frequency response:	±0.2% (DIN 45 500)
Normal tape:	40 Hz – 13,000 Hz (DIN 45 500) (40 Hz – 12,500 Hz ± 3 dB)
MAXELL UDXLII tape;	40 Hz – 14,000 Hz (DIN 45 500) (40 Hz – 13,000 Hz ± 3 dB)
TDK Metal tape;	40 Hz – 15,000 Hz (DIN 45 500) (40 Hz – 14,000 Hz ± 3 dB)
S/N ratio (MAXELL UDXLII tape):	
Dolby NR off;	56 dB
Dolby NR effect;	10 dB (at over 5 kHz, B-type) 20 dB (1 kHz to 10 kHz, C-type)
Input sensitivity and input impedance:	
Microphones;	0.2 mV (18 kohms)
Line In;	50 mV (50 kohms)
DIN In;	0.7 mV (18 kohms)
Output level and loaded impedance:	
Headphones;	0.2 mW ("0" dB), 8 ohms
Line Out;	550 mV ("0" dB), 50 kohms
DIN Out;	550 mV ("0" dB), 50 kohms

Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

1. Power Switch
2. Cassette Compartment
3. Digital Tape Counter and Counter Reset Button
4. Power Indicator
5. Sharpscan Peak Level Display Meter
6. Record Button
7. Play Button
8. Rewind Button
9. Fast-Forward Button
10. Stop/Eject Button
11. Pause Button
12. Microphone Jacks
13. Dolby NR Switches
14. Tape Selector Switches
15. Record Level Control
16. Headphones Jack
17. Line Output Jacks
18. Line Input Jacks
19. Input Selector Switch
20. DIN Record/Playback Socket
21. AC Power Supply Cord

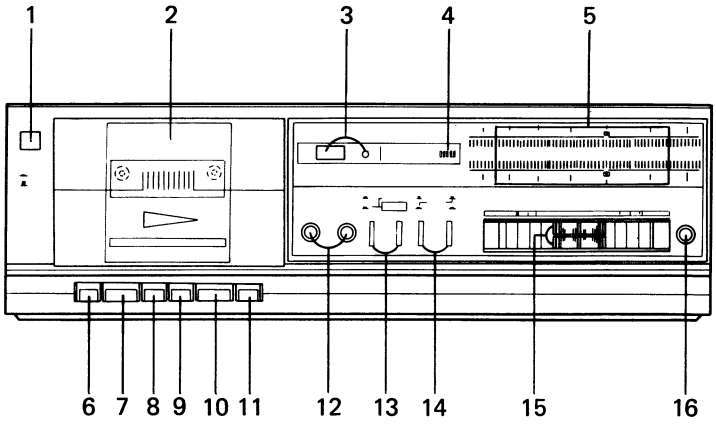

Figure 2–1

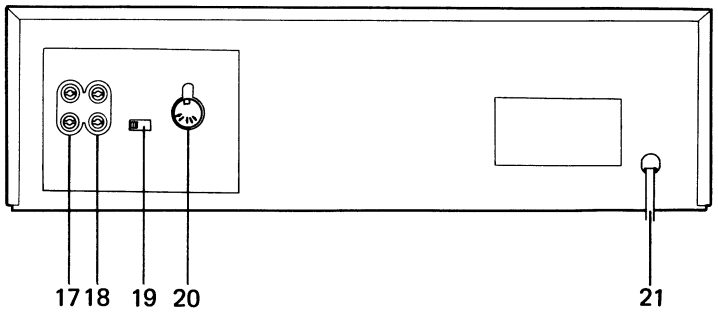

Figure 2–2

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EINE VOLLSTÄNDIGE BESCHREIBUNG DER BEDIENUNG DIESES GERÄTES IST IN DER BEDIENUNGSANLEITUNG ENTHALTEN.

TECHNISCHE DATEN

Spannungsversorgung:	Netzspannung 220 V, 50/60 Hz (RT-160H) Netzspannung 240 V, 50/60 Hz (RT-160E)
Leistungsaufnahme:	13 W
Bestückung:	5 ICs 12 Transistoren 7 Dioden 11 LEDs
Abmessungen:	Breite; 390 mm Höhe; 118 mm Tiefe; 235 mm
Gewicht:	2.9 kg
Band:	Kompaktcassettenband
Bandgeschwindigkeit:	4,75 cm/s
Gleichlaufschwankungen:	0,08% WRMS
Frequenzgang:	±0,2% (DIN 45 500)
Normalband;	40 Hz – 13 000 Hz (DIN 45 500) 40 Hz – 12 500 Hz ± 3 dB
MAXELL-UDXLII-Band;	40 Hz – 14 000 Hz (DIN 45 500) 40 Hz – 13 000 Hz ± 3 dB
TDK-Reineisenband;	40 Hz – 15 000 Hz (DIN 45 500) 40 Hz – 14 000 Hz ± 3 dB

Geräuschspannungsabstand (MAXELL-UDXLII-Band)
Dolby-Geräuschunterdrückungsschaltung ausgeschaltet;
56 dB 56 dB
Mit Dolby-Geräuschunterdrückungseffekt;
10 dB (bei über 5 kHz, B-typ)
20 dB (1 kHz bis 10 kHz, C-typ)

Eingangsempfindlichkeit und-impedanz:	
Mikrofoneingang:	0,2 mV (18 Kiloohm)
Direkteingang:	50 mV (50 Kiloohm)
DIN-Eingang:	0,7 mV x (18 Kiloohm)
Ausgangspegel und Lastimpedanz:	
Kopfhörerausgang:	0,2 mW ("0" dB), 8 Ohm
Direktausgang:	550 mV ("0" dB), 50 Kiloohm
DIN-Ausgang:	550 mV ("0" dB), 50 Kiloohm

Die technischen Daten für dieses Modell können ohne vorherige Ankündigung Änderungen unterworfen sein.

BEZEICHNUNG DER TEILE

1. Netzschalter
2. Cassettenfach
3. Digitales Bandzählwerk und Bandzählwerk-Rückstelltaste
4. Einschaltanzeige
5. Sharpscan-Spitzenwertanzeige
6. Aufnahmetaste
7. Wiedergabetaste
8. Rückspultaste
9. Schnellvorlauftaste
10. Stopp/Auswurftaste
11. Pausentaste
12. Mikrofonbuchsen
13. Dolby-NR-Schalter
14. Bandsortenwahlschalter
15. Aufnahmepegelsteller
16. Kopfhörebuchse
17. Direktausgangsbuchsen
18. Direkteingangsbuchsen
19. Eingangswahlschalter
20. Din-Anschluß für Aufnahme/Wiedergabe
21. Netzkabel

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POUR LA DESCRIPTION COMPLÈTE DU FONCTIONNEMENT DE CET APPAREIL, SE REPORTER AU MODE D'EMPLOI.

CARACTÉRISTIQUES

Alimentation:	220 V CA 50/60 Hz (RT-160H) 240 V CA 50/60 Hz (RT-160E)
Consommation:	13 W
Semi-conducteurs:	5 CI 12 transistors 7 diodes 11 LED
Dimensions:	Largeur; 390 mm Hauteur; 118 mm Profondeur; 235 mm
Poids:	2.9 kg
Bande:	Bande cassette compacte
Vitesse de la bande:	4,75 cm/s
Pleurage et scintillement:	0,08% WRMS
Réponse de fréquence:	±0,2% (DIN 45 500)
Band normale;	40 Hz à 13 000 Hz (DIN 45 500)
Bande MAXELL UDXLII;	40 Hz à 12 500 Hz ± 3 dB
Bande MAXELL UDXLII;	40 Hz à 14 000 Hz (DIN 45 500) 40 Hz à 13 000 Hz ± 3 dB
Bande métallique TDK;	40 Hz à 15 000 Hz (DIN 45 500) 40 Hz à 14 000 Hz ± 3 dB
Rapport S/B (Bande MAXELL UDXLII):	
Dolby NR coupe;	56 dB
Effet Dolby NR;	10 dB (à plus de 5 kHz, type B) 20 dB (1 kHz à 10 kHz, type C)
Sensibilité d'entrée et impédance d'entrée:	
Microphones:	0,2mV (18 kohms)
Entrée de ligne:	50mV (50 kohms)
Entrée de DIN:	0,7mV (18 kohms)
Niveau de sortie et impédance de charge:	
Casque:	0,2mW ("0" dB), 8 ohms
Sortie de ligne:	550mV ("0" dB), 50 kohms
Sortie de Din:	550mV ("0" dB), 50k ohms

Les caractéristiques de ce modèle sont sujettes à modification sans préavis.

NOMENCLATURE

1. Commutateur d'alimentation
2. Compartiment de cassette
3. Compteur numérique de bande et bouton de remise à zéro du compteur de bande
4. Témoin d'alimentation
5. Compteur d'affichage de niveau de crête Sharpscan
6. Bouton d'enregistrement
7. Bouton de lecture
8. Bouton de rebobinage
9. Bouton d'avance rapide
10. Bouton d'arrête/éjection
11. Bouton de pause
12. Douilles de microphone
13. Commutateurs Dolby NR
14. Commutateurs de sélection de bande
15. Commandes de niveau d'enregistrement
16. Douille de casque
17. Douilles desartie de ligne
18. Douilles d'entrée de ligne
19. Commutateur de sélection d'entrée
20. Douille DIN d'enregistrement/lecture
21. Cordon d'alimentation

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DISASSEMBLY

Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep its safety and excellent performance:

1. Take cassette tape out of the cassette holder.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit
3. Take off nylon bands or wire holders where they need be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
4. Take sufficient care on static electricity of integrated circuits and other circuits when servicing.

STEP	REMOVAL	PROCEDURE	FIG-URE
1	Cabinet	1. Screw ..... (A) x 5	4–1
2	Bottom plate	1. Screw ..... (B) x 2	4–3
3	Cassette deck mechanism	1. Tape counter drive belt .....(C) 2. Record/Playback selector rod .....(D) 3. Socket.....(E) x 3 4. Open the cassette holder .....(F)	4–2
		5. Screw .....(G) x 5	4–2,4–3
4	Front panel	1. Screw .....(H) x 5	4–2,4–3

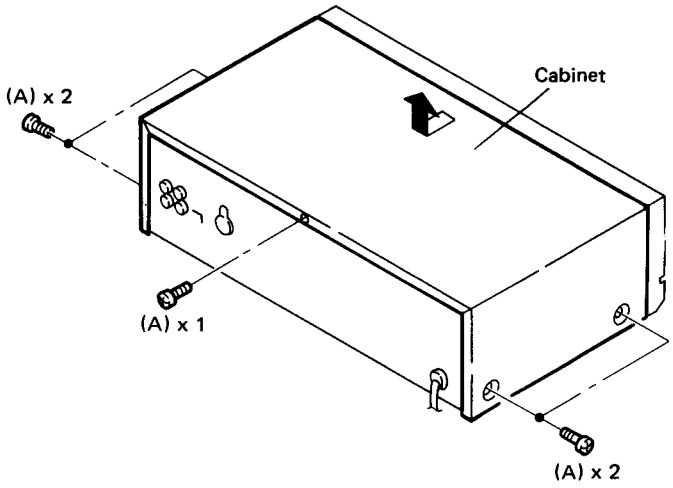

Figure 4–1

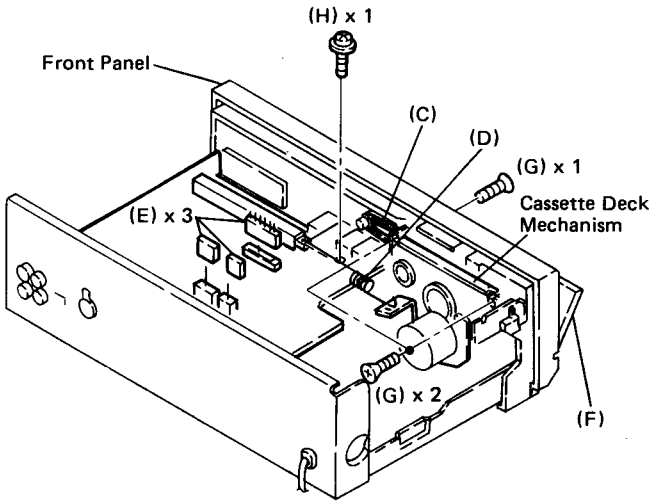

Figure 4–2

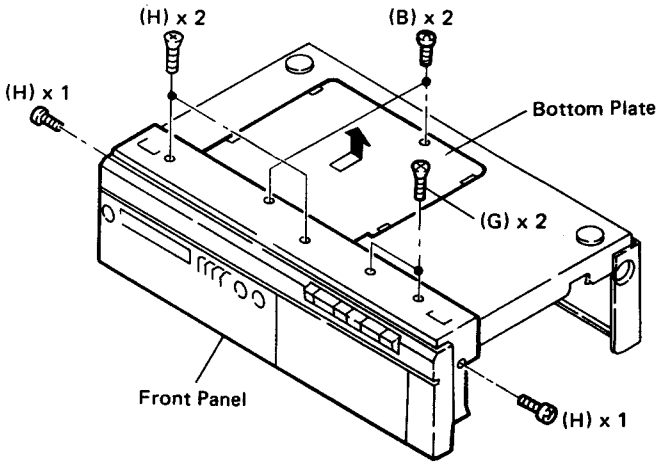

Figure 4–3

Ⓓ ZERLEGEN

Vorsichtsmassregeln für das zerlegen

Beim Zerlegen und Zusammenbauen des Gerätes die folgenden Anweisungen befolgen, um dessen Betriebssicherheit und ausgezeichnete Leistung aufrechtzuerhalten.

1. Cassette aus dem cassettenhalter entfernen.
2. Bevor mit dem Zerlegen des Gerätes begonnen wird, unbedingt den Netzkabelstecker aus der Netzsteckdose ziehen.
3. Nylonbänder oder Leitungshalter entfernen, falls dies beim Zerlegen des Gerätes erforderlich ist. Nach Warten des Gerätes darauf achten, die Leitungen wieder so zu verlegen, wie sie vor dem Zerlegen angeordnet waren.
4. Beim Ausführen von Wartungsarbeiten auf statische Elektrizität der integrierten Schaltkreise und anderen Schaltungen achten.

SCHRITT	ENTFERNEN	VERFAHREN (ZU ENTFERNENDE TEILE)	ABBILDUNG
1	Gehäuse	1. Schraube ..... (A) x 5	4–1
2	Bodenplatte	1. Schraube ..... (B) x 2	4–3
3	Cassettendec Cassettendeck-laufwerk	1. Bandzählwerk-Antriebs-riemen ..... (C) 2. Aufnahme-/Wiedergabe-Wahlschalterstab ..... (D) 3. Buchse ..... (E) x 3 4. Cassettenhalter öffnen .. (F)	4–2
		5. Schraube ..... (G) x 5	4–2, 4–3
4	Frontplatte	1. Schraube ..... (H) x 5	4–2, 4–3

Ⓕ DÉMONTAGE

Précautions pour le démontage

Lors du démontage de l'appareil et de son remontage, suivre les précautions ci-dessous, pour maintenir la sécurité et d'excellentes performances.

1. Déposer la bande cassette du porte-cassette.
2. S'assurer de retirer la fiche d'alimentation secteur de la prise murale avant de démarrer le démontage de l'appareil.
3. Déposer les bandes de nylon ou les serre-câbles si nécessaire lors du démontage de l'appareil. Après la réparation de l'appareil, s'assurer de redisposer les fils tel qu'ils étaient avant le démontage.
4. Faire attention à l'électricité statique des circuits intégrés et des autres circuits lors de la réparation.

ÉTAPE	DÉPOSE	PROCÉDÉ (PIÈCES À DÉPOSER)	FIGURE
1	Coffret	1. Vis ..... (A) x 5	4–1
2	Plaque de base	1. Vis ..... (B) x 2	4–3
3 3	Mécanisme du Mécanisme du magnétophone	1. Courroie d'entraînement du compteur de bande ... (C) 2. Tige de sélection enregistrement/lecture ... (D) 3. Douille ..... (E) x 3 4. Ouvrir le porte-cassette ..... (F)	4–2
		5. Vis ..... (G) x 5	4–2, 4–3
4	Panneau avant	1. Vis ..... (H) x 5	4–2, 4–3

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MECHANICAL ADJUSTMENT

ITEM	JIG	ADJUSTMENT POINTS	REMARKS (CHECK)
Driving power	Tape tension megurering cassette TW-2412	—	(More than 150 g)
Torque	Torque meter Play TW-2111 Fast-forward TW-2231 Rewind TW-2231	—	(Play: 35-60 g-cm) (Fast-forward: 85-115 g-cm) (Rewind: 85-115 g-cm)
Azimuth	Test tape MTT-114	Azimuth adjusting screw	Sine waveform attains the maximum.
Tape speed	Test tape MTT-111	Variable resistor on motor	2,980 ± 20 Hz

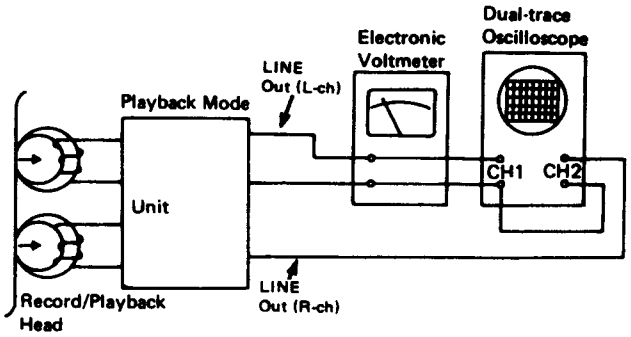

Figure 6–1 AZIMUTH

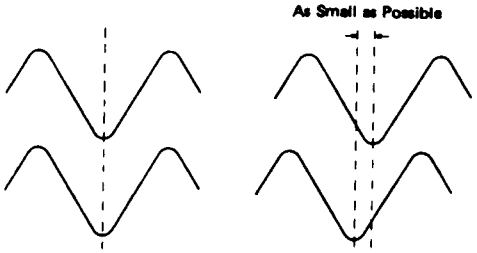

Figure 6–2 AZIMUTH WAVEFORM

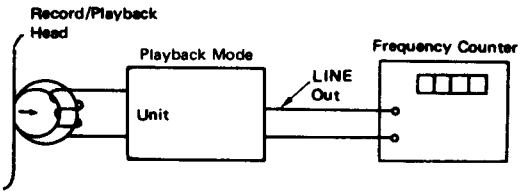

Figure 6–3 TAPE SPEED

TEST TAPES FOR MEASUREMENT

COMPACT CASSETTE TYPE			
TITLE	MODEL	FREQUENCY/ LEVEL	APPLICATION
FLUTTER	MTT-111	3 kHz, −10 dB	Tape speed, Wow and flutter check
AZIMUTH	MTT-113 MTT-113C MTT-114	6.3 kHz, −10 dB 8 kHz, −10 dB 10 kHz, −10 dB	Head azimuth adjustment
DISTORTION	MTT-118	1 kHz, −10 dB	Distortion check level adjustment
DOLBY LEVEL CALIBRATION	MTT-150	Dolby B-Type Tone 200 nwb/m	Dolby NR B-type level adjustment
BLANK	MTT-502	—	Record frequency check

TORQUE METER FOR COMPACT CASSETTE		
MODEL	MEASUREMENT RANGE	APPLICATION
TW-2111	10 – 100 g-cm	Normal : Playback torque
	1.5 – 10 g-cm	Normal : Back tension
TW-2121	10 – 100 g-cm	Reverse : Playback torque
	1.5 – 10 g-cm	Reverse : Back tension
TW-2231	30 – 200 g-cm	Fast-forward, Rewind torque
TW-2412	0 – 300 g	Normal : Driving power
TW-2422	0 – 300 g	Reverse : Driving power

Ⓓ MECHANISCHE EINSTELLUNG

BE-NENNUNG	FÜHRUNGS-LEHRE	EINSTELL-PUNKT	BEMERKUNGEN (PRÜFUNG)
Antriebs-kraft	Bandzug-Meßcassette TW-2412	——	(Mehr als 150 g)
Drehmo-ment	Drehmoment-messer Wiedergabe: TW-2111 Schnellvorlauf: TW-2231 Rückspulung: TW-2231	——	(Wiedergabe: 35–60 g-cm) (Schnellvorlauf: 85–115 g-cm) (Rückspulung: 85–115 g-cm)
Azimut	Testband MTT-114	Azimuteinstell-schraube	Sinuswellenform wird maximal.
Bandgesch-windigkeit	Testband MTT-111	Stellwiderstand am Motor	2 980 ± 20 Hz

Ⓕ RÉGLAGE MÉCANIQUE

ARTICLE	GABARIT	POINTS DE RÉGLAGE	REMARQUES (VÉRIFICATION)
Puissance d'entraî-nement	Cassette de mesure de tension de la band TW-2412	——	(Plus de 150 g)
Couple	Compteur de couple Lecture: TW-2111 Avance rapide: TW-2231 Rembobinage: TW-2231	——	(Lecture: 35 à 60 g-cm) (Avance rapide: 85 à 115 g-cm) (Rebobinage: 85 à 115 g-cm)
Azimuth	Bande d'essai MTT-114	Vis de réglage de l'azimuth	La forme d'onde sinusoïdale atteint le maximum.
Vitesse de la bande	Bande d'essai MTT-111	Résistance variable sur le moteur	2 980 ± 20 Hz

TESTBÄNDER FÜR MESSUNG

KOMPAKTCASSETTENTYPE			
BENENNUNG	MODELL	FREQUENZ/ PEGEL	ANWENDUNG
GLEICHLAUF-SCHWANK-UNGEN	MTT-111	3 kHz, –10 dB	Überprüfung der Bandgesch-windigkeit und Gleichlauf-schwankungen
AZIMUT	MTT-113 MTT-113C MTT-114	6,3 kHz, –10 dB 8 kHz, –10 dB 10 kHz,–10 dB	Kopfazimutein-stellung
KLIRR-FAKTOR	MTT-118	1 kHz, – 10 dB	Verzerrungs-pegeleinstellung
DOLBY-PEGEL-EICHUNG	MTT-150	Ton von Dolby B-Typ 200 nwb/m	Dolby-NR B-Typ-Pegelein-stellung
LEER-CASSETTE	MTT-502	——	Überprüfung der Aufnahme-frequenz

BANDES D'ESSAI POUR MESURAGE

TYPE CASSETTE COMPACTE			
TITRE	MODÈLE	FRÉQUENCE/ NIVEAU	APPLICATION
PLEURAGE	MTT-111	3 kHz, – 10 dB	Vérification de la vitesse de bande et du pleurage et scintillement
AZIMUTH	MTT-113 MTT-113C MTT-114	6,3 kHz, – 10 dB 8 kHz, – 10 dB 10 kHz, – 10 dB	Réglage de l'azimuth de la tête
DISTORSION	MTT-118	1 kHz, – 10 dB	Réglage de niveau de distorsion
CALIBRAGE DU NIVEAU DOLBY	MTT-150	Tonalité Dolby type B, 200 nwb/m	Réglage du niveau type B Dolby NR
ESPACE VIERGE	MTT-502	——	Vérification de la fréquence d'enregistrement

DREHMOMENTMESSER FÜR KOMPAKTCASSETTE		
MODELL	MESSBEREICH	ANWENDUNG
TW-2111	10 – 100 g-cm	Normal : Wiedergabedrehmoment
	1,5 – 10 g-cm	Normal : Rückzug
TW-2121	10 – 100 g-cm	Rücklauf : Wiedergabedrehmoment
	1,5 – 10 g-cm	Rücklauf : Rückzug
TW-2231	30 – 200 g-cm	Schnellvorlauf-, Rückspul-drehmoment
TW-2412	0 – 300 g	Normal : Antriebskraft
TW-2422	0 – 300 g	Rücklauf : Antriebskraft

JAUGE DE COUPLE POUR CASSETTE COMPACTE		
MODÈLE	GAMME DE MESURE	APPLICATION
TW-2111	10 – 100 g-cm	Normal : Lecture d'enroulement
	1,5 – 10 g-cm	Normal : Tension arrière
TW-2121	10 – 100 g-cm	Retour : Lecture d'enroulement
	1,5 – 10 g-cm	Retour : Tension arrière
TW-2231	30 – 200 g-cm	Couple d'avance rapide et de rebobinage
TW-2412	0 – 300 g	Normal : Puissance d'entraînement
TW-2422	0 – 300 g	Retour : Puissance d'entraînement

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CIRCUIT ADJUSTMENT

SETTING POSITION OF SWITCH AND KNOB	• Tape Selector Switch: Normal • Dolby NR Switch: off • Input Selector Switch: Line		
ITEM	**INPUT**	**ADJUSTMENT POINT**	**REMARKS (CHECK)**
BIAS OSCILLATION FREQUENCY	——	L302	105 ±5 kHz
BIAS CURRENT	——	L: VR301 R: VR302	**Normal: 45 mV** (Metal: **59 ~ 71 mV**) (CrO_2: **81 ~ 99 mV**)
ERASE CURRENT	——	——	(Metal: 36 V ±4V)
LEVEL METER SENSITIVITY	400 Hz, −10 dB (1 V = 0 dB)	L: R150 R152 R: R250 R252	1. Adjust the record level control knobs so that the electronic voltmeter reads 580 mV. 2. See that the segments of up to 0 dB are lighting up. If the segments of up to −1 dB or of up to +1 dB are lighting up, take the procedures shown in the Table *1.
PLAYBACK SENSITIVITY	Test tape MTT-150	L: VR101 R: VR201	Normal: 500 mV
RECORD/PLAYBACK SENSITIVITY	Non-recorded tape (MTT-502) 315 Hz, −20 dB (1 V=0 dB)	L: VR103 R: VR203	1. Adjust the record level knobs so that the electronic voltmeter reads 410 mV. 2. Playback the normal tape recorded and adjust the semi-variable resistor so that the electronic voltmeter reads 345 – 487 mV.

Table *1

Lighting segments	Procedures
Up to −1 dB	Cut the resistor R152 or R252
Up to +1 dB	Cut the resistor R150 or R250

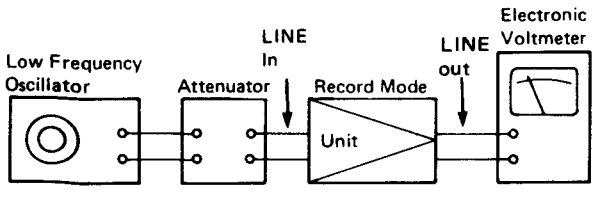


Figure 8-6 LEVEL METER SENSITIVITY

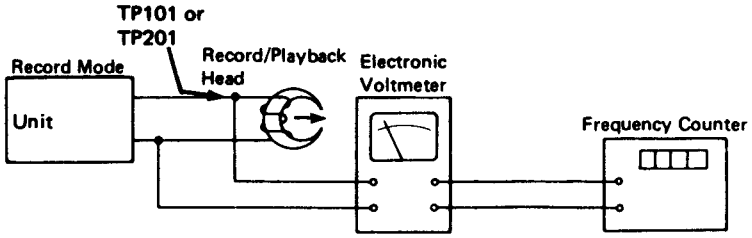


Figure 8–1 BIAS OSCILLATION FREQUENCY/BIAS CURRENT

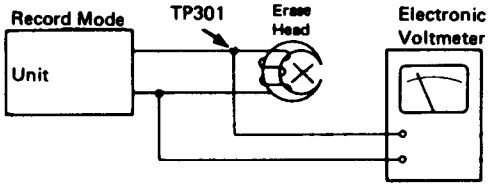


Figure 8–2 ERASE CURRENT

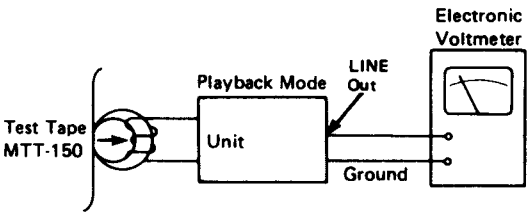


Figure 8–3 PLAYBACK SENSITIVITY

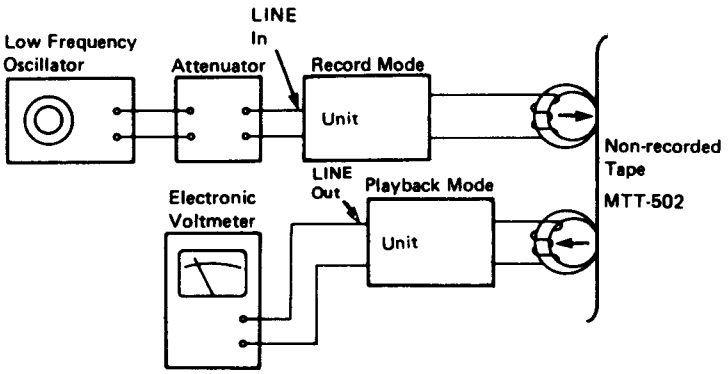


Figure 8–4 RECORD/PLAYBACK SENSITIVITY

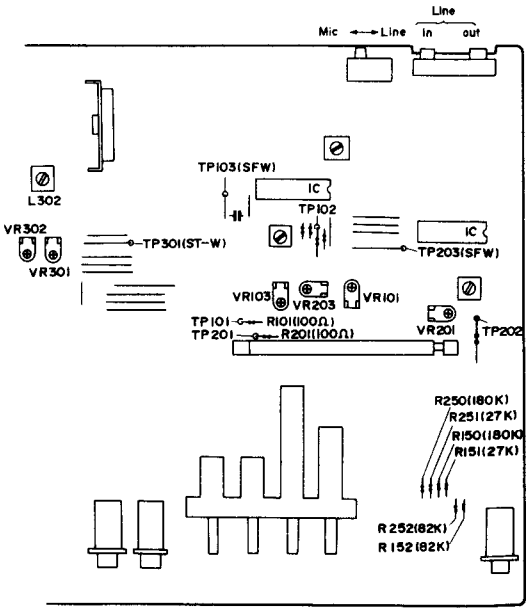


Figure 8–5 ADJUSTMENT POINTS

Ⓓ SCHALTUNGSEINSTELLUNG

SCHALTER- UND STELLER-EINSTELL-POSITION	• Wahlschalter: Normal • Dolby-NR-Schalter: Aus • Eingangswahlschalter: Line		
BENNENNUNG	**EINGANG**	**EINSTELL-PUNKT**	**BEMERKUNGEN (PRÜFUNG)**
VORMAGNETI-SIERUNGS-SCHWING FREQUENZ	–	L301	105 ±5 kHz
VORMAGNETI-SIERUNGS-STROM	–	L: VR301 R: VR302	Normalband: 4,5 mV (Reineisenband: 59 ~71 mV) (CrO_2 - Band: 81 ~99 mV)
LÖSCHSTROM	–	–	Reineisenband: 36 ±4V
PEGELANZEIGE-EMPFINDLICH-KEIT	400 Hz, –10 dB (1 V=0 dB)	L: R150 R152 R: R250 R252	1. Die Aufnahme-pegelsteller so einstellen, daß der elektronische Spannungsmesser 580 mV anzeigt. 2. Überprüfen, ob die Segmente von leuchten. Wenn die Segmente von bis zu –1 dB oder von bis zu +1 dB aufleuchten, die Nachstellung gemäß Tabelle *1 vornehmen.
WIEDERGABE-EMPFINDLICH-KEIT VON DECK 1	Testband MTT-150	L: VR102 R: VR202	Normalband: 505 mV
AUFNAHME-/ WIEDERGABE-EMPFINDLICH-KEIT	Unbespiel-tes band MTT-502 –20 dB (1 V=0 dB)	L: VR103 R: VR203	1. Den Aufnahme-pegelsteller so einstellen, daß der elektronische Spannungsmesser 410 mV anzeigt. 2. Das bespielte Normalband wie-dergeben und den trimmer so ein-steelen, daß der elektronische Spannungsmesser 345 – 487 mV anzeigt.

Tabelle *1

Aufleuchtende Segmente	Verfahren
Bis zu –1 dB	Den Widerstand R152 oder R252 trennen.
Bis zu +1 dB	Den Widerstand R150 oder R250 trennen.

Ⓕ RÉGLAGE DU CIRCUIT

RÉGLAGE DE LA POSITION DES COMMUTA-TEURS ET DES BOUTONS	• Commutateur de sélection: Normale • Commutateur Dolby NR: Coupé • Commutateur de sélection d'entrée: Line		
ARTICLE	**ENTRÉE**	**POINT DE RÉGLAGE**	**REMARQUES (VÉRIFICATION)**
PRÉQUENCE DE L'OSCILLA-TION DE POLARISATION	–	L301	105 ±5 kHz
COURANT DE POLARISATION	–	G: VR301 D: VR302	Normal: 4,5 mV (Metal: 59 ~ 71 mV) (CrO_2: 81 ~ 99mV)
COURANT D'EFFACEMENT	–	–	Metal: 36 ±4V
SENSIBILITÉ DU COMPTEUR DE NIVEAU	400 Hz, –10 dB (1 V=0 dB)	L: R150 R152 R: R250 R252	1. Régler les bou-tons de niveau d'enregistrement de telle sorte que le voltmètre électronique indique 580 mV. 2. Voir si les seg-ments au-dessus de 0 dB sont allumés. Si les segments jusqu'à –1 dB ou ¡1 dB sont allumés, effectuer les procédés indiqués dans le Tableau *1
SENSIBILITÉ DE LECTURE DE LA PLATINE 1	Band d'essai MTT-150	G: VR102 D: VR202	Normal: 505 mV
SENSIBILITÉ D'ENREGISTRE-MENT/LECTURE	Bande non enregistrée MTT-502 –20 dB (1 V=0 dB)	G: VR103 D: VR203	1. Régler la bouton de commande de niveau du disque de telle sorte que le voltmètre électronique indique 410 mV. 2. Lire une bande normale enre-gistrée et régler la résistance semi-variable de telle sorte que le voltmètre électronique indique 345 à 487 mV.

Tableau *1

Segments allumés	Procédés
Jusqu'à –1 dB	Couper la résistance R152 ou R252
Jusqu'à +1 dB	Couper la résistance R150 ou R250

Ⓔ NOTES ON SCHEMATIC DIAGRAM

- **Resistor:**
  To differentiate the units of resistors, such symbols as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbols is ohm-type resistor. Besides, the one with "Fusible" is a fuse type.
- **Capacitor:**
  To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-microfarad and the unit of the capacitor without such a symbol is microfarad.
- **Parts marked with "⚠" (▭) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.**
- **The indicated voltage in each section is the one measured** by electronic voltmeter between such a section and the **chassis with no signal given.**
  ( ): Record mode (normal position)
  Marking, except for ( ): Stop mode
- **Schematic diagram and wiring side of P.W.Board for this model are subject to change for improvement without prior notice.**

Ⓓ ANMERKUNGEN ZUN SCHEMATISCHEN SCHALTPLAN

- **Widerstände:**
  Um die Einheiten der Widerstände unterscheiden zu können, werden Symbole wie K und M benutzt. Das Symbol K bedeutet 1 000 Ohm und das Symbol M 1 000 Kilo ohm; Bei Widerständen ohne Symbol handelt es sich um ohmsche Widerstände. Außerdem sind die mit "Fusible" bezeichneten Widerstände Schmelzsicherungstypen.
- **Kondensatoren:**
  Zum Bezeichnen der Kondensatoreinheit wird das Symbol P benutzt; dieses Symbol P bedeutet Nanofarad. Die Einheit eines Kondensators ohne Symbol ist Mikrofarad. Für Elektrolytkondensatoren wird die Bezeichnung "Kapazität/-Stehspannung" benutzt.
- **Die mit ⚠ (▭) bezeichneten Teile sind besonders wichtig für die Aufrechterhaltung der Sicherheit. Beim Wechseln dieser Teile sollten die vorgeschriebenen Teile immer verwendet werden, um sowohl die Sicherheit als auch die Leistung des Gerätes aufrechtzuerhalten.**
- Die in den einzelnen Teilen angegebenen Spannungen werden mit einem elektronischen Voltmeter zwischen dem betreffen den Teil und dem Chassis ohne Signalzuleitung gemessen.
  ( ): Aufnahme-Betriebsart
  Kennzeichnung außer ( ): Stopp-Betriebsart
- Änderungen des schematischen Schaltplans und der Verdrahtungsseite der Leiterplatte für dieses Modell im Sinne von Verbesserungen jederzeit vorbehalten.

Ⓕ REMARQUES CONCERNANT LE DIAGRAMME SCHÉMATIQUE

- **Résistance:**
  Pour différencier les unités de résistances, on utilise des symboles tels que K et M: le symbole K signifie 1000 ohms, le symbole M 1000 Kohms, et la résistance donnée sans symbole est une résistance de type ohm. En outre, celle qui est dotées de "Fusible" est de type à fusible.
- **Condensateur:**
  Pour indiquer l'unité de condensateur, on utilise le symbole P; ce symbole P signifie micro-microfarad, et l'unité de condensateur donnée sans ce symbole est le microfarad. En ce qui concerne le condensateur électrolytique, on utilise l'expression "tension de régime/capacité";
- **Les pièces portant la marque ⚠ (▭) sont particulièrement importantes pour le maintien de la sécurité. S'assurer de les remplacer par des pièces du numéro de prèce spécifié pour maintenir la sécurité et la performance de l'appareil.**
- La tension indiquée dans chaque section est celle mesurée par le voltmètre électronique entre la section en question et le châssis, en l'absence de tout signal.
  ( ): Mode d'enregistrement
  Marque, excepté pour ( ): Mode d'arrêt
- Le diagramme schématique et le côté câblage de la PMI de ce modèle sont sujets à modifications sans préavis pour l'amélioration de ce produit.

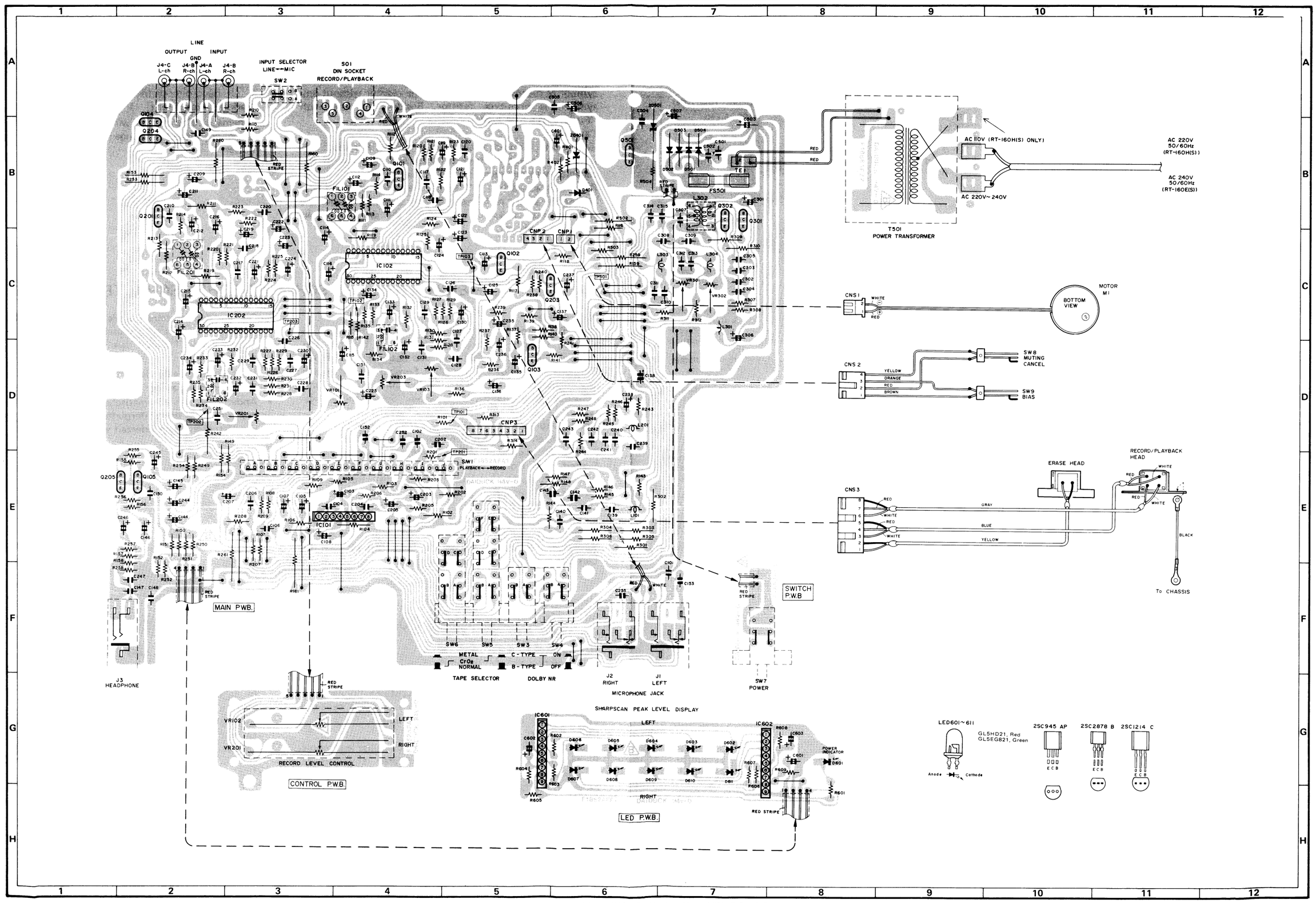


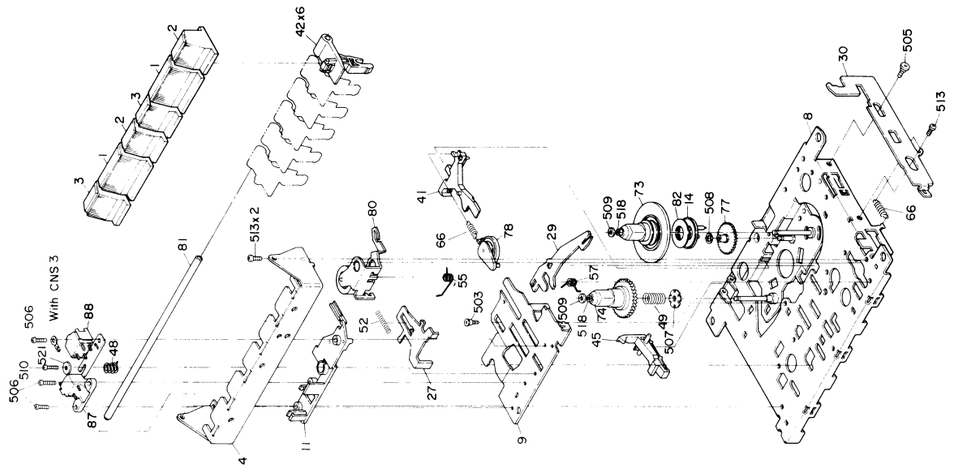
Figure 11 WIRING SIDE OF P.W. BOARD

REF NO	FUNCTION	POSITION
SW1	REC/PB	P.B — REC
SW2	INPUT SELECT	LINE — MIC
SW3	DOLBY B/C	B — C
SW4	DOLBY NR	OFF — ON
SW5	TAPE SELECT	NORMAL — CrO2

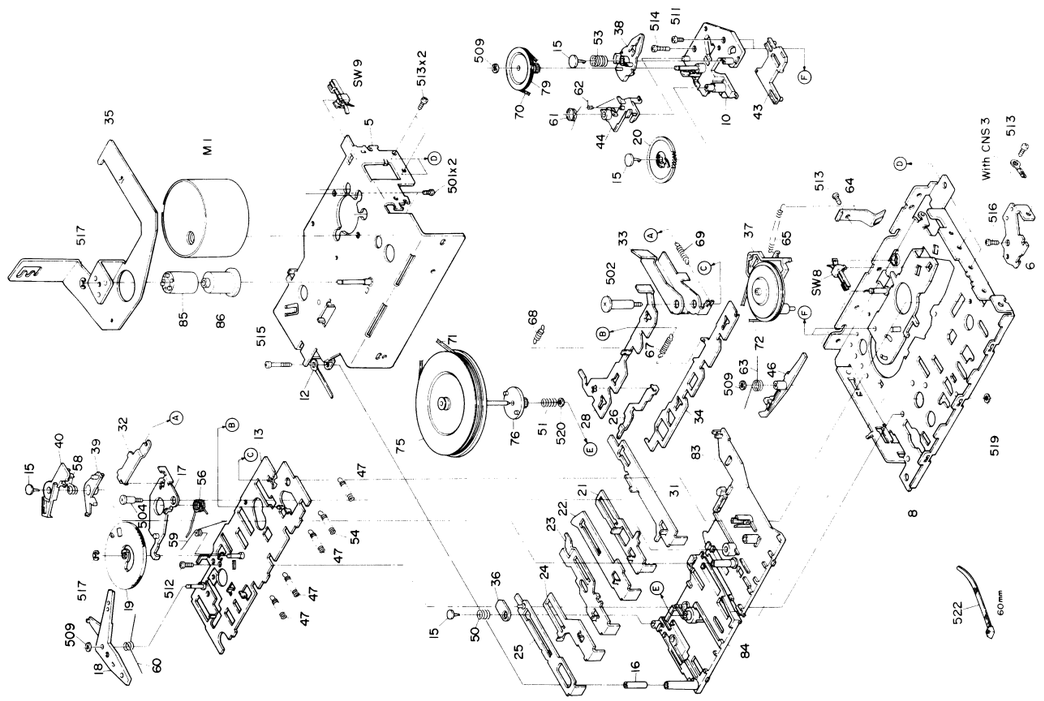
REF NO	FUNCTION	POSITION
SW6	TAPE SELECT	OTHER — METAL
SW7	POWER	OFF — ON
SW8	MUTING CANCEL	OFF — ON
SW9	BIAS	OFF — ON

- NOTES ON SCHEMATIC DIAGRAM can be found on page 10.
- ANMERKUNGEN ZUM SCHEMATISCHEN SCHALTPLAN stehen auf Seite 10.
- REMARQUES CONCERNANT LE DIAGRAMME SCHEMATIQUE sont indiquées à la page 10.

Figure 13 SCHEMATIC DIAGRAM



TOP VIEW



BOTTOM VIEW

Figure 15 EXPLODED VIEW (MECHANISM)

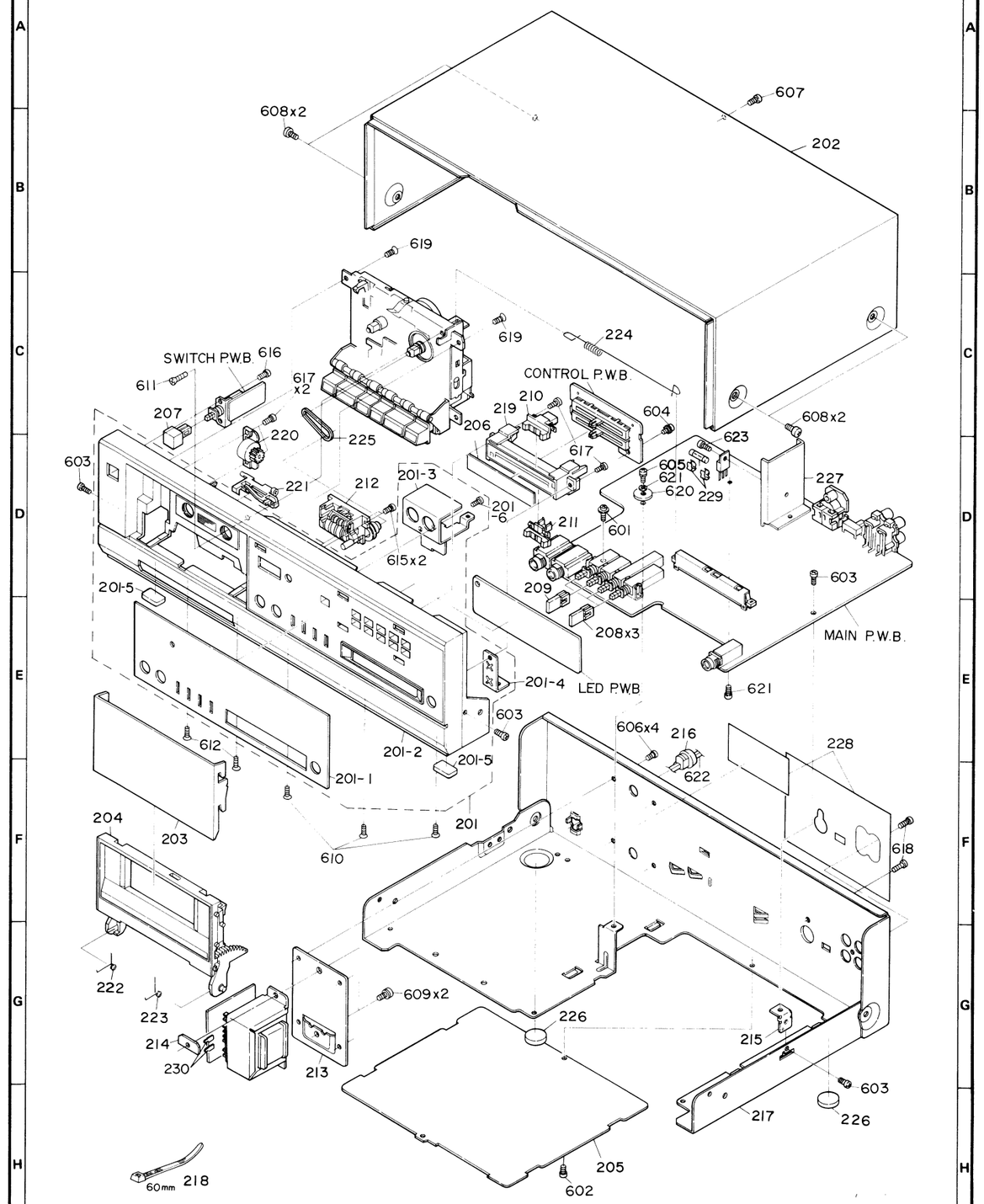


Figure 16 EXPLODED VIEW (CABINET)

PACKING METHOD (FOR UK)

SETTING POSITIONS OF SWITCHES AND KNOBS	
Power Switch	**OFF**
Mechanism	**OFF**
Tape Counter	**"000"**
Dolby NR Switch	**OFF**
Dolby NR B/C Selector Switch	**B-TYPE**
Tape Selector Switch	**OFF**
Record Level Control	**0**
Record Level Balance Control	**MIN**
Input Selector Switch	**LINE**

1. ACCESSORIES
   - Polyethylene Bag — SSAKA0104AFZZ
   - Warranty Card — TGANE117AFZZ
   - Operation Manual — TINSZ0703AFZZ
   - DIN Cord — QCNW-0727AFZZ
2. Packing Add. — SPAKA1236AFZZ
3. Pcking Case — SPAKC3045AFZZ
4. Pad. Front Panel — SPAKP0274AFZZ
5. Polyethylene Bag — SSAKH0075AGZZ
6. Caution Label — TCAUZ0039AFZZ
   Polyethylene Bag
7. Label, Special Feature — TLABM0171AFZZ
8. Label MADE IN KOREA — TLABZ0505AFZZ

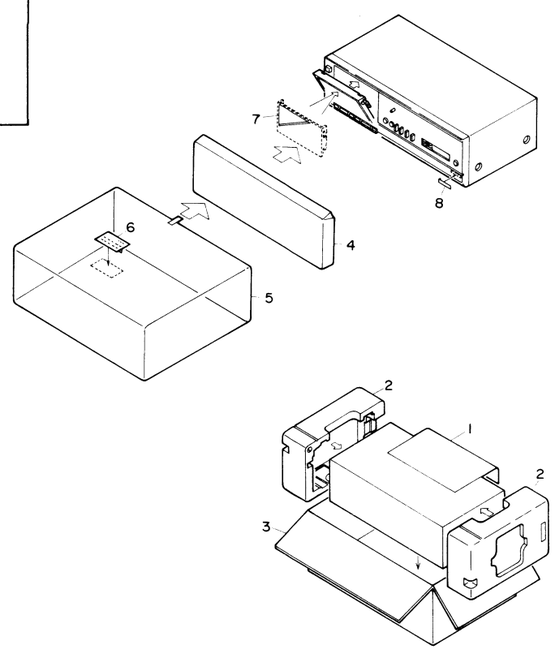


Figure 17-1

CAUTION (FOR UK)

If any one of the nylon bands shown in the Figure 17-2 is once removed for some reason, be sure to reprise it to the original place in the same appearance as before.

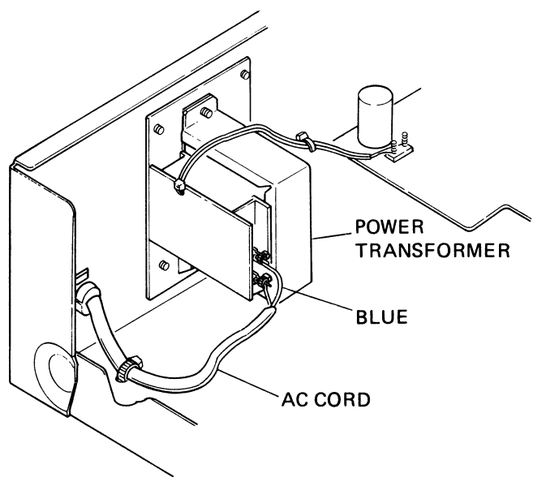
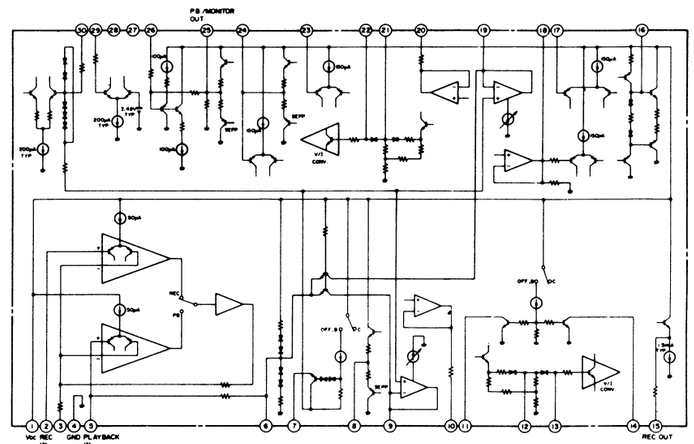
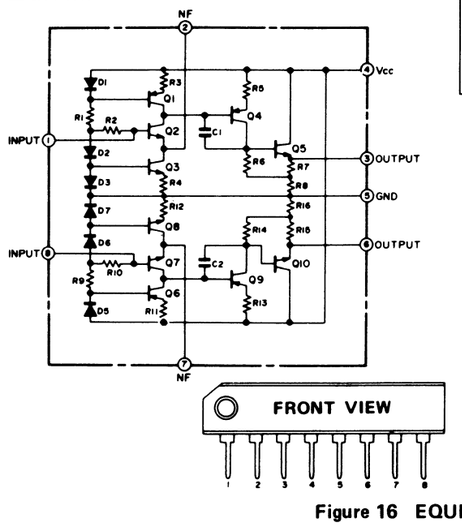


Figure 17-2

HA12058NT



LA3160



BA6124

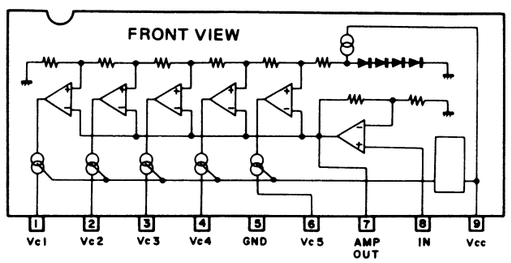


Figure 16 EQUIVALENT CIRCUIT (BLOCK DIAGRAM) OF IC

Ⓔ

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Ⓓ

ERSATZTEILLISTE

"BESTELLEN VON ERSATZTEILEN"

Um Ihren Auftrag schnell und richtig ausfuhren zu können, bitten wir um die folgenden Angaben.

1. MODELLNUMMER
2. REF. NR.
3. TEIL NR.
4. BESCHREIBUNG

ANMERKUNGEN:
Die mit ⚠ bezeichneten Teile sind besonders wichtig fur die Aufrechterhaltung der Sicherheit. Beim Wechseln dieser Teile sollten die vorgeschriebenen Teile immer verwendet werden, um sowohl die Sicherheit ais auch die Leistung des Gerätes aufrechtzuerhalten.

Ⓕ

LISTE DES PIÈCES DE RECHANGE

"COMMENT COMMANDER DES PIÈCES DE RECHANGE"

Pour voir votre commande exécutée de manière rapide et correcte, veuillez fournir les renseignements suivants.

1. NUMÉRO DU MODÈLE
2. N° DE RÉFÉRENCE
3. N° DE LA PIÈCE
4. DESCRIPTION

NOTE:
Les pièces portant la marque ⚠ sont particulièrement importantes pour le maintien de la securité. S'assurer de les remplacer par des pièces du numéro de pièce spécifié pour maintenir la sécurité et la performance de l' appareil.

REF.NO.	PART NO.	DESCRIPTION	CODE
		INTEGRATED CIRCUITS	
IC101	VHiLA3160//-1	Pre-Amprifier,LA3160	A G
IC102	VHiHA12058NT1	Dolby NR Circuit,HA12058 NT	A U
IC202	VHiHA12058NT1	Dolby NR Circuit,HA12058 NT	A U
IC601	VHiBA6124//-1	LED Drive,BA6124	A G
IC602	VHiBA6124//-1	LED Drive,BA6124	A G
		TRANSISTORS	
Q101	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q102	VS2SA733-P/-1	Silicon,PNP,2SA733 P	A C
Q103	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q104	VS2SC2878B/-1	Silicon,NPN,2SC2878 B	A C
Q105	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q201	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q203	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q204	VS2SC2878B/-1	Silicon,NPN,2SC2878 B	A C
Q205	VS2SC945AP/-1	Silicon,NPN,2SC945 AP	A B
Q301	VS2SC1214-C-1	Silicon,NPN,2SC1214 C	A C
Q302	VS2SC1214-C-1	Silicon,NPN,2SC1214 C	A C
Q501	VS2SD1405BL-1	Silicon,NPN,2SD1405 BL	A E
		DIODES	
D401	VHD1SS119//-1	Silicon,1SS119	A A
D501	VHD10E1N//-1	Silicon,10E1N	A B
D502	VHD10E1N//-1	Silicon,10E1N	A B
D503	VHD10E1N//-1	Silicon,10E1N	A B
D504	VHD10E1N//-1	Silicon,10E1N	A B
D601	VHPGL5HD21/-1	LED, RED, GL5HD21	A C
D602	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
D603	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
D604	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
D605	VHPGL5HD21/-1	LED, RED, GL5HD21	A C
D606	VHPGL5HD21/-1	LED, RED, GL5HD21	A C
D607	VHPGL5HD21/-1	LED, RED, GL5HD21	A C
D608	VHPGL5HD21/-1	LED, RED, GL5HD21	A C
D609	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
D610	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
D611	VHPGL5EG821-1	LED, GREEN, GL5EG821	A C
ZD401	VHERD6R2JB2-1	Zener, 6.2V, RD6.2JB2	A B
ZD501	VHEHZ12B1//-1	Zener, 12.7V, HZ12B1	A B

REF.NO.	PART NO.	DESCRIPTION	CODE
		FILTERS	
FIL101	RCiLL0093AFZZ	Multiplex	A K
FIL102	RCiLL0095AFZZ	Spectral Skewing	A F
FIL201	RCiLL0093AFZZ	Multiplex	A K
FIL202	RCiLL0095AFZZ	Spectral Skewing	A F
		TRANSFORMERS	
⚠T501	RTRNP1077AFZZ	Power Transformer,H	
⚠T501	RTRNP1079AFZZ	Power Transformer,E	
		COILS	
L101	RCiLZ0145AFZZ	6.8 mH,Record Equalizer	A D
L201	RCiLZ0145AFZZ	6.8 mH,Record Equalizer	A D
⚠L301	RCiLZ0146AFZZ	560 μH,Choke	A D
L302	RCiLB0725AFZZ	Bias Oscillator	A F
L303	RCiLZ0144AFZZ	15 mH,Bias Trap	A D
L304	RCiLZ0144AFZZ	15 mH,Bias Trap	A D
		CONTROLS	
VR101	RVR-M0391AFZZ	10 kohm (B)	A B
VR102,202	RVR-P0114AFZZ	50 kohms (A)	A L
VR103	RVR-M0391AFZZ	10 kohm (B)	A B
VR201	RVR-M0391AFZZ	10 kohm (B)	A B
VR203	RVR-M0391AFZZ	10 kohm (B)	A B
VR301	RVR-M0394AFZZ	50 kohms (B)	A B
VR302	RVR-M0394AFZZ	50 kohms (B)	A B
		ELECTROLYTIC CAPACITORS	
		(All electrolytic capacitors are ±20% type.)	
C103	VCEALA1CC106M	10 μF,16V	A B
C105	RC-EZA107AF1A	100 μF,10V	A B
C107	RC-EZA335AF1H	3.3 μF,50V	A B
C108	RC-EZA107AF1C	100 μF,16V	A B
C109	RC-EZA105AF1H	1 μF,50V	A B
C111	RC-EZA336AF1C	33 μF,16V	A B
C112	RC-EZA106AF1C	10 μF,16V	A B
C113	RC-EZA106AF1C	10 μF,16V	A B
C114	RC-EZA476AF1C	47 μF,16V	A B
C115	RC-EZA105AF1H	1 μF,50V	A B
C116	RC-EZA227AF1A	220 μF,10V	A B

REF.NO.	PART NO.	DESCRIPTION	CODE
C119	VCEALA1EW475M	4.7 μF,25V	A B
C121	RC-EZA334AF1H	0.33 μF,50V	A B
C122	RC-EZA154AF1H	0.15 μF,50V	A B
C123	RC-EZA474AF1H	0.47 μF,50V	A B
C124	RC-EZA684AF1H	0.68 μF,50V	A B
C125	RC-EZA106AF1C	10 μF,16V	A B
C130	VCEALA1EW475M	4.7 μF,25V	A B
C132	RC-EZA154AF1H	0.15 μF,50V	A B
C133	RC-EZA474AF1H	0.47 μF,50V	A B
C134	RC-EZA106AF1C	10 μF,16V	A B
C135	RC-EZA154AF1H	0.15 μF,50V	A B
C136	RC-EZA335AF1H	3.3 μF,50V	A B
C137	RC-EZA475AF1E	4.7 μF,25V	A B
C138	RC-EZA106AF1C	10 μF,16V	A B
C144	RC-EZA475AF1E	4.7 μF,25V	A B
C145	RC-EZA335AF1H	3.3 μF,50V	A B
C146	RC-EZA336AF1A	33 μF,10V	A B
C203	VCEALA1CC106M	10 μF,16V	A B
C205	RC-EZA107AF1A	100 μF,10V	A B
C207	RC-EZA335AF1H	3.3 μF,50V	A B
C209	RC-EZA105AF1H	1 μF,50V	A B
C211	RC-EZA336AF1C	33 μF,16V	A B
C212	RC-EZA106AF1C	10 μF,16V	A B
C214	RC-EZA476AF1C	47 μF,16V	A B
C215	RC-EZA105AF1H	1 μF,50V	A B
C216	RC-EZA227AF1A	220 μF,10V	A B
C219	VCEALA1EW475M	4.7 μF,25V	A B
C221	RC-EZA334AF1H	0.33 μF,50V	A B
C222	RC-EZA154AF1H	0.15 μF,50V	A B
C223	RC-EZA474AF1H	0.47 μF,50V	A B
C224	RC-EZA684AF1H	0.68 μF,50V	A B
C225	RC-EZA106AF1C	10 μF,16V	A B
C230	VCEALA1EW475M	4.7 μF,25V	A B
C232	RC-EZA154AF1H	0.15 μF,50V	A B
C233	RC-EZA474AF1H	0.47 μF,50V	A B
C234	RC-EZA106AF1C	10 μF,16V	A B
C235	RC-EZA154AF1H	0.15 μF,50V	A B
C236	RC-EZA335AF1H	3.3 μF,50V	A B
C237	RC-EZA475AF1E	4.7 μF,25V	A B
C238	RC-EZA106AF1C	10 μF,16V	A B
C244	RC-EZA475AF1E	4.7 μF,25V	A B
C245	RC-EZA335AF1H	3.3 μF,50V	A B
C246	RC-EZA336AF1A	33 μF,10V	A B
C301	RC-EZA106AF1C	10 μF,16V	A B
C306	RC-EZA106AF1C	10 μF,16V	A B
C401	RC-EZA226AF1E	22 μF,25V	A B
C503	RC-EZW108AF1V	1000 μF,35V	A F
C506	RC-EZA107AF1C	100 μF,16V	A B
C507	RC-EZA106AF1E	10 μF,25V	A B
C601	RC-EZA106AF1C	10 μF,16V	A B
C602	RC-EZA475AF1E	4.7 μF,25V	A B
C603	RC-EZA475AF1E	4.7 μF,25V	A B
		CAPACITORS	

There are two types of capacitors available and they can be identified from each other by reading their Part Numbers.

- Ceramic type capacitor;
  A symbol "C" or "K" is given at the 3rd digit of its Part Number like "VCC (or K)·····J."
- Semiconductor type capacitor.
  A symbol "T" is given at the 3rd digit of its Part Number like "VCT·····J."

The capacitance error of each capacitor is indicated by the symbol given at the 13th digit of the Part Number as follows:"J" (±5%), "K" (±10%), "M" (±20%), "N" (±30%), "C" (±0.25 pF), "D" (±0.5 pF), "Z" (+80−20%).

C101	VCKZPA1HF403Z	0.04 μF,50V	A A
C102	VCCSPA1HL151J	150 pF,50V	A A
C104	VCTYPA1EX102J	0.001 μF,25V	A A
C106	VCTYPA1EX223J	0.022 μF,25V	A A

REF.NO.	PART NO.	DESCRIPTION	CODE
C110	VCCSPA1HL101J	100 pF,50V	A A
C117	VCTYPA1EX333J	0.033 μF,25V	A B
C118	VCTYPA1EX103J	0.01 μF,25V	A A
C120	VCTYPA1EX183J	0.018 μF,25V	A A
C126	VCCSPA1HL390J	39 pF,50V	A A
C127	VCTYPA1EX562J	0.0056 μF,25V	A A
C128	VCTYPA1EX472J	0.0047 μF,25V	A A
C129	VCTYPA1EX472J	0.0047 μF,25V	A A
C131	VCTYPA1EX823J	0.082 μF,25V	A B
C139	VCTYPA1EX103J	0.01 μF,25V	A A
C140	VCTYPA1EX102J	0.001 μF,25V	A A
C141	VCTYPA1EX102J	0.001 μF,25V	A A
C142	VCTYPA1EX562J	0.0056 μF,25V	A A
C143	VCTYPA1EX682J	0.0068 μF,25V	A A
C147	VCKZPA1HF103Z	0.01 μF,50V	A A
C148	VCKZPA1HF403Z	0.04 μF,50V	A A
C149	VCKZPA1HF403Z	0.04 μF,50V	A A
C150	VCKZPA1HF403Z	0.04 μF,50V	A A
C151	VCTYPA1EX102J	0.001 μF,25V	A A
C152	VCCSPA1HL681J	680 pF,50V	A A
C153	VCTYPA1EX102J	0.0022 μF,25V	A A
C202	VCCSPA1HL151J	150 pF,50V	A A
C204	VCTYPA1EX102J	0.001 μF,25V	A A
C206	VCTYPA1EX223J	0.022 μF,25V	A A
C210	VCCSPA1HL101J	100 pF,50V	A A
C217	VCTYPA1EX333J	0.033 μF,25V	A B
C218	VCTYPA1EX103J	0.01 μF,25V	A A
C220	VCTYPA1EX183J	0.018 μF,25V	A A
C226	VCCSPA1HL390J	39 pF,50V	A A
C227	VCTYPA1EX562J	0.0056 μF,25V	A A
C228	VCTYPA1EX472J	0.0047 μF,25V	A A
C229	VCTYPA1EX472J	0.0047 μF,25V	A A
C231	VCTYPA1EX823J	0.082 μF,25V	A B
C239	VCTYPA1EX103J	0.01 μF,25V	A A
C240	VCTYPA1EX102J	0.001 μF,25V	A A
C241	VCTYPA1EX102J	0.001 μF,25V	A A
C242	VCTYPA1EX562J	0.0056 μF,25V	A A
C243	VCTYPA1EX682J	0.0068 μF,25V	A A
C247	VCKZPA1HF103Z	0.01 μF,50V	A A
C251	VCTYPA1EX102J	0.001 μF,25V	A A
C252	VCCSPA1HL681J	680 pF,50V	A A
C253	VCTYPA1EX102J	0.001 μF,25V	A A
C302	VCTYPA1EX223J	0.022 μF,25V	A A
C303	VCTYPA1EX472J	0.0047 μF,25V	A A
C304	VCTYPA1EX472J	0.0047 μF,25V	A A
C305	VCTYPA1EX682J	0.0068 μF,25V	A A
C307	VCQPKA2AA682J	0.0068 μF,100V,PP	A B
C308	VCCSPA1HL151J	150 pF,50V	A A
C309	VCCSPA1HL151J	150 pF,50V	A A
C310	VCCSPA1HL271J	270 pF,50V	A A
C311	VCCSPA1HL271J	270 pF,50V	A A
C312	VCCSPA1HL271J	270 pF,50V	A A
C313	VCCSPA1HL271J	270 pF,50V	A A
C314	VCCSPA1HL681J	680 pF,50V	A A
C315	VCCSPA1HL681J	680 pF,50V	A A
⚠C501	VCKZPA1HF403Z	0.04 μF,50V	A A
⚠C502	VCKZPA1HF403Z	0.04 μF,50V	A A
C504	VCKZPA1HF403Z	0.04 μF,50V	A A
C505	VCKZPA1HF403Z	0.04 μF,50V	A A
		RESISTORS	
		(Unless otherwise specfifed, resistors are ±5%,carbon type.)	
R101	VRD-ST2CD101J	100 ohm,1/6W	A A
R102	VRD-ST2CD183J	18 kohms,1/6W	A A
R103	VRD-ST2CD102J	1 kohm,1/6W	A A
R104	VRD-ST2EE331J	330 ohms,1/4W	A A
R105	VRD-ST2CD680J	68 ohms,1/6W	A A
R106	VRD-ST2CD104J	100 kohm,1/6W	A A

REF.NO.	PART NO.	DESCRIPTION	CODE
R107	VRD-ST2CD822J	8.2 kohms,1/6W	A A
R108	VRD-ST2CD562J	5.6 kohms,1/6W	A A
R109	VRD-ST2CD153J	15 kohms,1/6W	A A
R110	VRD-ST2CD103J	10 kohm,1/6W	A A
R111	VRD-ST2CD104J	100 kohm,1/6W	A A
R112	VRD-ST2CD102J	1 kohm,1/6W	A A
R113	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R114	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R115	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R116	VRD-ST2CD104J	100 kohm,1/6W	A A
R117	VRD-ST2CD223J	22 kohms,1/6W	A A
R118	VRD-ST2CD682J	6.8 kohms,1/6W	A A
R119	VRD-ST2CD562J	5.6 kohms,1/6W	A A
R120	VRD-ST2CD822J	8.2 kohms,1/6W	A A
R121	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R122	VRD-ST2CD243J	24 kohms,1/6W	A A
R123	VRD-ST2CD622J	6.2 kohms,1/6W	A A
R124	VRD-ST2CD823J	82 kohms,1/6W	A A
R125	VRD-ST2CD205J	2 Mohms,1/6W	A A
R126	VRD-ST2CD103J	10 kohm,1/6W	A A
R127	VRD-ST2CD472J	4.7 kohms,1/6W	A A
R128	VRD-ST2CD471J	470 ohms,1/6W	A A
R129	VRD-ST2CD683J	68 kohms,1/6W	A A
R130	VRD-ST2CD823J	82 kohms,1/6W	A A
R131	VRD-ST2CD622J	6.2 kohms,1/6W	A A
R132	VRD-ST2CD823J	82 kohms,1/6W	A A
R133	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R134	VRD-ST2CD102J	1 kohm,1/6W	A A
R135	VRD-ST2CD103J	10 kohm,1/6W	A A
R136	VRD-ST2CD123J	12 kohms,1/6W	A A
R137	VRD-ST2CD223J	22 kohms,1/6W	A A
R138	VRD-ST2CD684J	680 kohms,1/6W	A A
R139	VRD-ST2CD154J	150 kohms,1/6W	A A
R140	VRD-ST2CD153J	15 kohms,1/6W	A A
R141	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R142	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R143	VRD-ST2CD121J	120 ohms,1/6W	A A
R144	VRD-ST2CD392J	3.9 kohms,1/6W	A A
R145	VRD-ST2CD222J	2.2 kohms,1/6W	A A
R146	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R147	VRD-ST2CD182J	1.8 kohms,1/6W	A A
R148	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R149	VRD-ST2CD102J	1 kohm,1/6W	A A
R150	VRD-ST2CD184J	180 kohms,1/6W	A A
R151	VRD-ST2CD273J	27 kohms,1/6W	A A
R152	VRD-ST2CD823J	82 kohms,1/6W	A A
R153	VRD-ST2CD103J	10 kohm,1/6W	A A
R154	VRD-ST2CD102J	1 kohm,1/6W	A A
R155	VRD-ST2CD473J	47 kohms,1/6W	A A
R156	VRD-ST2CD471J	470 ohms,1/6W	A A
R157	VRD-ST2CD820J	82 ohms,1/6W	A A
R158	VRD-ST2CD561J	560 ohms,1/6W	A A
R159	VRD-ST2CD123J	12 kohms,1/6W	A A
R160	VRD-ST2CD102J	1 kohm,1/6W	A A
R161	VRD-ST2CD822J	8.2 kohms,1/6W	A A
R201	VRD-ST2CD101J	100 ohm,1/6W	A A
R202	VRD-ST2CD183J	18 kohms,1/6W	A A
R203	VRD-ST2CD102J	1 kohm,1/6W	A A
R205	VRD-ST2CD680J	68 ohms,1/6W	A A
R206	VRD-ST2CD104J	100 kohm,1/6W	A A
R207	VRD-ST2CD822J	8.2 kohms,1/6W	A A
R208	VRD-ST2CD562J	5.6 kohms,1/6W	A A
R209	VRD-ST2CD153J	15 kohms,1/6W	A A
R210	VRD-ST2CD103J	10 kohm,1/6W	A A
R211	VRD-ST2CD104J	100 kohm,1/6W	A A
R212	VRD-ST2CD102J	1 kohm,1/6W	A A
R213	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R214	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R219	VRD-ST2CD562J	5.6 kohms,1/6W	A A
R220	VRD-ST2CD822J	8.2 kohms,1/6W	A A
R221	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R222	VRD-ST2CD243J	24 kohms,1/6W	A A
R223	VRD-ST2CD622J	6.2 kohms,1/6W	A A
R224	VRD-ST2CD823J	82 kohms,1/6W	A A
R225	VRD-ST2CD205J	2 Mohms,1/6W	A A
R226	VRD-ST2CD103J	10 kohm,1/6W	A A
R227	VRD-ST2CD472J	4.7 kohms,1/6W	A A
R228	VRD-ST2CD471J	470 ohms,1/6W	A A
R229	VRD-ST2CD683J	68 kohms,1/6W	A A
R230	VRD-ST2CD823J	82 kohms,1/6W	A A
R231	VRD-ST2CD622J	6.2 kohms,1/6W	A A
R232	VRD-ST2CD823J	82 kohms,1/6W	A A
R233	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R234	VRD-ST2CD102J	1 kohm,1/6W	A A
R235	VRD-ST2CD103J	10 kohm,1/6W	A A
R236	VRD-ST2CD123J	12 kohms,1/6W	A A
R237	VRD-ST2CD223J	22 kohms,1/6W	A A
R238	VRD-ST2CD684J	680 kohms,1/6W	A A
R239	VRD-ST2CD154J	150 kohms,1/6W	A A
R240	VRD-ST2CD153J	15 kohms,1/6W	A A
R241	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R242	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R243	VRD-ST2CD121J	120 ohms,1/6W	A A
R244	VRD-ST2CD392J	3.9 kohms,1/6W	A A
R245	VRD-ST2CD222J	2.2 kohms,1/6W	A A
R246	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R247	VRD-ST2CD182J	1.8 kohms,1/6W	A A
R248	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R249	VRD-ST2CD102J	1 kohm,1/6W	A A
R250	VRD-ST2CD184J	180 kohms,1/6W	A A
R251	VRD-ST2CD273J	27 kohms,1/6W	A A
R252	VRD-ST2CD823J	82 kohms,1/6W	A A
R253	VRD-ST2CD103J	10 kohm,1/6W	A A
R254	VRD-ST2CD102J	1 kohm,1/6W	A A
R255	VRD-ST2CD473J	47 kohms,1/6W	A A
R256	VRD-ST2CD471J	470 ohms,1/6W	A A
R257	VRD-ST2CD820J	82 ohms,1/6W	A A
R258	VRD-ST2CD561J	560 ohms,1/6W	A A
R259	VRD-ST2CD123J	12 kohms,1/6W	A A
R260	VRD-ST2CD102J	1 kohm,1/6W	A A
R261	VRD-ST2CD822J	8.2 kohms,1/6W	A A
⚠R301	VRG-ST2EC220J	22 ohms,1/4W,Fusible	A B
R302	VRD-ST2EE390J	39 ohms,1/4W	A A
R303	VRD-ST2EE390J	39 ohms,1/4W	A A
R304	VRD-ST2EE390J	39 ohms,1/4W	A A
R305	VRD-ST2EE101J	100 ohm,1/4W	A A
R306	VRD-ST2EE121J	120 ohms,1/4W	A A
R307	VRD-ST2CD153J	15 kohms,1/6W	A A
R308	VRD-ST2CD153J	15 kohms,1/6W	A A
R309	VRD-ST2EE3R9J	3.9 kohms,1/4W	A A
R310	VRD-ST2EE3R9J	3.9 kohms,1/4W	A A
R311	VRD-ST2CD392J	3.9 kohms,1/6W	A A
R312	VRD-ST2CD392J	3.9 kohms,1/6W	A A
R313	VRD-ST2CD473J	47 kohms,1/6W	A A
R314	VRD-ST2CD473J	47 kohms,1/6W	A A
R401	VRD-ST2CD332J	3.3 kohms,1/6W	A A
R402	VRD-ST2CD223J	22 kohms,1/6W	A A
R502	VRD-ST2EE222J	2.2 kohms,1/4W	A A
R503	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R504	VRD-ST2EE561J	560 ohms,1/4W	A A
R601	VRD-ST2CD122J	1.2 kohms,1/6W	A A
R602	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R603	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R604	VRD-ST2CD223J	22 kohms,1/6W	A A
R605	VRD-ST2CD103J	10 kohm,1/6W	A A
R606	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R607	VRD-ST2CD152J	1.5 kohms,1/6W	A A
R608	VRD-ST2CD223J	22 kohms,1/6W	A A
R609	VRD-ST2CD103J	10 kohm,1/6W	A A

OTHER CIRCUITRY PARTS

REF.NO.	PART NO.	DESCRIPTION	CODE
CNP1	QCNCM512BAFZZ	Plug,2Pin	A B
CNP2	QCNCM633DAFZZ	Plug,4Pin	A B
CNP3	QCNCM633HAFZZ	Plug,8Pin	A B
CNS1	————	Connector,2Pin,Part of M1	—
CNS2	QCNW-2980AFZZ	Connector,4Pin	A D
CNS3	QCNW-2979AFZZ	Assembly,8Pin	A K
⚠FS501	QFS-C631EAFNi	Fuse,T630mA/250V	A D
J1,2	QJAKF0065AFZZ	Jack,Microphone	A D
J3	QJAKJ0146AFZZ	Jack,Headphone	A D
J4(A-D)	QSōCJ0498AFZZ	Socket,Line Input/Output	A E
⚠M1	RMōTV0176AF01	Motor Assembly	A T
SO1	QSōCD4507AFZZ	DIN Socket,Record/Play back	A E
SW1	QSW-S0443AFZZ	Switch,Slide Type	A K
SW2	QSW-S0427AFZZ	Switch,Slide Type	A D
SW3～6	QSW-P0561AFZZ	Switch,4-Segment,Push Type	A S
SW7	QSW-P0365AFZZ	Switch,Push Type	A F
SW8	QSW-F0197AFZZ	Switch,Leaf Type	A C
SW9	QSW-F0197AFZZ	Switch,Leaf Type	A C
TE1	QCNCM552BAFZZ	Terminal,2Pin	A A

MECHANICAL PARTS

REF.NO.	PART NO.	DESCRIPTION	CODE
1	JKNBR0444AFSC	Button,Play,Stop	A C
2	JKNBR0445AFSC	Button,Pause,Rewind	A C
3	JKNBR0446AFSC	Button,Fast-Forward, Record	A C
4	LANGF0863AFFW	Bracket,Button	A D
5	LANGF0881AFZZ	Bracket,Flywheel	A A
6	LANGQ0927AFFW	Bracket,Switch	A B
8	————	Chassis Assembly,Main	—
9	LCHSS0201AFFW	Chassis,Sub	A G
10	LCHSZ0163AFZZ	Full Auto Base	A D
11	LDAiH0063AF00	Head Base	A B
12	LHLDW3056AFZZ	Wire Holder	A A
13	LPLTM0148AFZZ	Plate,Lever Guide	A E
14	LPLTP0068AF00	Clutch Plate,Auto Stop	A B
15	LRTNP0058AFZZ	Stopper	A A
16	LSLVM0178AFFD	Sleeve	A C
17	MARMM0069AFZZ	Lever,PAD	A C
18	MARMP0024AF00	Lever,Swing	A B
19	MCAMP0060AF00	Cam,PAD	A B
20	MCAMP0061AF00	Cam,Full Auto	A B
21	MLEVF1616AFFW	Lever,Play	A B
22	MLEVF1617AFFW	Lever,Rewind	A B
23	MLEVF1618AFFW	Lever,Fast-Forward	A B
24	MLEVF1619AFFW	Lever,Stop	A B
25	MLEVF1620AFZZ	Lever,Pause	A B
26	MLEVF1621AFFW	Lever,Eject Action	A A
27	MLEVF1622AFFW	Lever,Interlocking	A B
28	MLEVF1624AFFW	Lever,Switch	A C
29	MLEVF1626AFFW	Lever,Play Idler Release	A B
30	MLEVF1627AFFW	Lever,Eject	A C
31	MLEVF1628AFFW	Lever,Record	A B
32	MLEVF1629AFFW	Lever,Record Sensor	A C
33	MLEVF1630AFFW	Lever,Record Switch	A C
34	MLEVF1631AFFW	Lever,Lock	A C
35	MLEVF1668AFFW	Lever,Record Interlocking	A D
36	MLEVP0502AFZZ	Lever,Pause Lock	A B
37	MLEVP0518AFZZ	Lever,Fast-Forward/ Rewind	A K
38	MLEVP0519AF00	Lever,Full Auto Sensor	A A
39	MLEVP0520AF00	Lever,Play Lock	A A
40	MLEVP0521AF00	Lever,Stop Lock	A A
41	MLEVP0522AF00	Lever,Brake	A B
42	MLEVP0523AF00	Lever,Button	A B
43	MLEVP0525AF00	Lever,Pause Coupler	A B
44	MLEVP0526AF00	Lever,Full Auto Killer	A B
45	MLEVP0527AF00	Lever,Erage Prevention	A A
46	MLEVP0553AF00	Lever,Stop Killer	A C
47	MSPRC0455AFFJ	Spring,Lever Return	A A
48	MSPRC0456AFFJ	Spring,Azimuth	A A
49	MSPRC0457AFFJ	Spring,Back Tension	A A
50	MSPRC0458AFFJ	Spring,Pause Lock Lever	A A
51	MSPRC0459AFFJ	Spring,Flywheel	A A
52	MSPRC0460AFFJ	Spring,Interlocking Lever	A A
53	MSPRC0462AFFJ	Spring,Auto Stop Cluth	A A
54	MSPRC0492AFFJ	Spring,Lever Return	A A
55	MSPRD0570AFFJ	Spring,Pinch Roller	A A
56	MSPRD0571AFFJ	Spring,PAD Lever	A A
57	MSPRD0572AFFJ	Spring,Head Base Retaining	A A
58	MSPRD0573AFFJ	Spring,Cam Lock	A A
59	MSPRD0574AFFJ	Spring,PAD Cam	A A
60	MSPRD0575AFFJ	Spring,Swing Lever	A A
61	MSPRD0576AFFJ	Spring,Full Auto Killer Lever	A A
62	MSPRD0577AFFJ	Spring,Full Auto Killer	A A
63	MSPRD0597AFFJ	Sring,Stop Killer Lever	A A
64	MSPRP0370AFFW	Plate Spring,Cassette Retaining	A A
65	MSPRT1070AFFJ	Sring,Fast-Forward/ Rewind Gear	A A
66	MSPRT1071AFFJ	Spring,Play Idler	A A
67	MSPRT1072AFFJ	Spring,Lock Plate	A A
68	MSPRT1073AFFJ	Spring,Switch Lever	A A
69	MSPRT1074AFFJ	Spring,Record Sensor	A A
70	NBLTK0291AF00	Belt,Full Auto Gear Drive	A B
71	NBLTK0303AF00	Belt,Flywheel Drive	A B
72	NBLTK0304AF00	Belt,Fast-Foward/Rewind Gear Drive	A B
73	NDAiR0185AFZZ	Turntable,Take-Up	A E
74	NDAiR0186AF00	Turntable,Supply	A B
75	NFLYC0120AFZZ	Flywheel	A G
76	NGERH0144AF00	Gear,Flywheel	A B
77	NGERH0149AF00	Gear,Fast-Forward	A B
78	NiDR-0088AFZZ	Idler,Play	A E
79	NPLYR0106AF00	Pulley,Full Auto Gear	A B
80	NRōLY0065AFZZ	Pinch Roller	A E
81	NSFTT0311AFFD	Shaft,Button	A C
82	PCUSF0029AFZZ	Felt,Clutch	A A
83	PGiDP0002AF00	Guide,Lever,Left	A C
84	PGiDP0003AFZZ	Guide,Lever,Right	A C
85	PSPAZ0107AFZZ	Spacer,Record/Playback Changover,Outer	A C
86	PSPAZ0155AF00	Spacer,Record/Playback Changover,Inner	A B
87	RHEDA0125AFZZ	Head,Erase	A H
88	RHEDH0135AFZZ	Head,Record/Playback	A M
501	LX-BZ0328AFFD	Screw,ϕ2.6×2.6mm	A A
502	LX-HZ0137AFFD	Screw,ϕ2.6×21mm	A B
503	LX-HZ0138AFFD	Screw,ϕ2×4.4mm	A B
504	LX-HZ0139AFFD	Screw,ϕ2.6×9.8mm	A B
505	LX-HZ0141AFFD	Screw,ϕ2.6×3.3mm	A B
506	LX-HZ0142AFFD	Screw,ϕ2.9×9mm	A A
507	LX-WZ1076AF00	Washer,ϕ2.6×ϕ8.5×0.5mm	A A
508	LX-WZ1086AFZZ	Washer,ϕ1.5×ϕ3.5×0.5mm	A A
509	LX-WZ9064AFZZ	Washer,ϕ1.5×ϕ3.8×0.5mm	A A
510	XBPSD20W08000	Screw,ϕ2×8mm	A A
511	XHBSD26P05000	Screw,ϕ2.6×5mm	A A
512	XHBSD26P06000	Screw,ϕ2.6×6mm	A A
513	XHPSD26P04000	Screw,ϕ2.6×4mm	A A
514	XHPSD26P10000	Screw,ϕ2.6×10mm	A A
515	XHPSD26P26000	Screw,ϕ2.6×26mm	A A
516	XJBSD20P08000	Screw,ϕ2×8mm	A A
517	XREUJ20-04000	Stop Ring,ϕ2mm	A A

REF.NO.	PART NO.	DESCRIPTION	CODE
518	XWHJZ21-01340	Washer, ϕ2.1×ϕ4×0.13mm	A A
519	XWHJZ21-05040	Washer, ϕ2.1×ϕ4×0.5mm	A A
520	XWHJZ23-05044	Washer, ϕ2.1×ϕ4.4×0.5mm	A A
521	XWHSD21-05065	Washer, ϕ2.1×ϕ6.5×0.5mm	A A
522	LHLDW1075AFZZ	Nylon Band,60mm	A A
	CABINET PARTS		
201	CPNLC1560AF01	Front Panel Assembly	
201-1	HDECP0250AFSA	Decoration Plate	A M
201-2	————	Front Panel	—
201-3	LANGQ0934AFZZ	Bracket,Microphone Jack	A E
201-4	LANGQ0935AFZZ	Bracket,Control Holder	A C
201-5	PFLT-0494AFZZ	Felt,Front Leg	A A
201-6	XJBSD30P08000	Screw, ϕ3×8mm	A A
202	GCAB-3165AFSA	Cabinet	A R
203	GCöVA1498AFSA	Cover,Cassette Holder	A G
204	GFTAC1393AFSA	Holder,Cassette	A G
205	GiTAU0031AFZZ	Plate,Bottom	A Q
206	HDECB0257AFSA	Decoration Plate,Record Level Control	A C
207	JKNBM0428AFSL	Button,Power Switch	A B
208	JKNBM0547AFSC	Button,Tape Selector/ Dolby NR ON-OFF	A B
209	JKNBM0547AFSD	Button,Dolby B/C Selector	A B
210	JKNBZ0247AFSA	Knob,Record Level Control (Left)	A D
211	JKNBZ0248AFSA	Knob,Record Level Control (Right)	A D
212	KCöUB0167AFZZ	Tape Counter	A G
213	LANGQ0936AFZZ	Bracket,Power Transformer	A D
214	LANGR0546AFZZ	Bracket,Power Transformer Strengthen	A B
215	LANGT0979AFZZ	Bracket,Main P.W. Board	A B
⚠216	LBSHC0004AGZZ	Bushing,AC Power Supply Cord	A B
217	LCHSM0514AFZZ	Chassis,Main	
218	LHLDW1075AFZZ	Nylon Band,60mm	A A
219	LHLDZ1259AFSA	Holder,Record Level Control	A D
220	MLiFP0038AFZZ	Damper,Cassette Holder	A E
221	MLöKC0063AFZZ	Lever,Cassette Holder Lock	A C
222	MSPRD0581AFFJ	Spring,Cassette Holder, Left	A A
223	MSPRD0582AFFJ	Spring,Cassette Holder, Right	A A
224	MSPRT1099AFFJ	Rod,Record/Playback Selector	A C
225	NBLTK0308AFZZ	Belt,Tape Counter	A B
226	PFLT-0369AFZZ	Felt,Rear Reg	A A
227	PRDAR0337AFFW	Heat Sink	A C
228	TSPC-1254AFZZ	**Label, Specifications, with "MADE IN KOREA",H**	
228	TSPC-1255AFZZ	Label,Specifications,H	
228	TSPC-1256AFZZ	Label,Specifications,E	
⚠229	QFSHD1054AFZZ	Holder,Fuse	A A
⚠230	QLUGP0157AFZZ	Lug	A A
601	LX-HZ0087AFFD	Screw, ϕ3 x 8mm	A A
602	LX-HZ0105AFFF	Screw, ϕ3×6mm	A B
603	XHBSD30P06000	Screw, ϕ3×6mm	A A
604	XHBSD30P08R00	Screw, ϕ3×8mm	A A
605	XHBSD30P08000	Screw, ϕ3×8mm	A A
606	XHBSF30P06000	Screw, ϕ3×6mm,Black	A A
607	XHBSN30P08000	Screw, ϕ3×8mm	A A
608	XHBSN40P08000	Screw, ϕ4×8mm	A A
609	XHMSF40P10K00	Screw, ϕ4×10mm,Black	A A
610	XHSSD30P08000	Screw, ϕ3×8mm	A A
611	XHSSN26P08000	Screw, ϕ2.6×8mm	A A
612	XHSS330P08000	Screw, ϕ3×8mm,Red	A A
615	XJBSD26P10000	Screw, ϕ2.6×10mm	A A
616	XJBSD30P08000	Screw, ϕ3×8mm	A A
617	XJBSD30P10000	Screw, ϕ3×10mm	A A
618	XJBSF30P08000	Screw, ϕ3×8mm,Black	A A
619	XJBS330P10000	Screw, ϕ3×10mm,Red	A A
620	XWHSD35-10150	Washer, ϕ3.5×ϕ15×1mm	A A
621	XWSSJ30-07000	Washer, ϕ3×0.7mm	A A
⚠622	QACCB0059AF09	AC Power Supply Cord,E	
⚠622	QACCV0001AGZZ	AC Power Supply Cord,H	A L
623	XHBSF30P08000	Screw, ϕ3×8mm,Black	A A
	ACCESSORIES/PACKING PARTS		
	QCNW-0727AFZZ	Connecting Cord,DIN Type	A P
	SPAKA1236AFZZ	Packing Add,(Left/Right)	
	SPAKC3043AFZZ	Packing Case, with "MADE IN KOREA",H	
	SPAKC3044AFZZ	Packing Case,H	
	SPAKC3045AFZZ	Packing Case,E	
	SPAKP0274AFZZ	Pad,Front Panel	A A
	SSAKA0024AFZZ	Polyethylene Bag, Operation Manual,H	A A
	SSAKA0104AFZZ	Polyethylene Bag, Operation Manual,E	A H
	SSAKH0075AGZZ	Polyethylene Bag,Unit	A B
	TCAUH0056AGZZ	Caution Label,AC Power Supply Cord,E	A A
	TCAUZ0039AFZZ	Caution Label,Polyethylene Bag,E	A A
	TGANE1117AFZZ	Warranty Card,E	A C
	TGANG1054AFZZ	Warranty Card,H	A A
	TiNSZ0703AFZZ	Operation Manual	
	TLABM0171AFZZ	Label,Special Feature	A B
	TLABZ0505AFZZ	Label,E MADE IN KOREA	

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